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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,399	06/26/2001	Fernando Incertis Carro	FR920000027US1	2163

7590 04/27/2005

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EXAMINER	
SMITH, PETER J	
ART UNIT	**PAPER NUMBER**
2176	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/892,399	CARRO, FERNANDO INCERTIS	
	Examiner	Art Unit	
	Peter J Smith	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☒ Claim(s) *25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: amendment filed 1/19/2005.

2. Claims 1-30 are pending in the case. Claims 1, 11, 18, and 26 are independent claims.

Claim Objections

3. Claim 25 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 25 depends on claim 24. Claim 25 has the same exact limitation as claim 24 and thus does not further limit the claimed invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Robinson et al. (hereinafter "Robinson"), "A framework for interacting with paper", Eurographics '97, Volume 16, Number 3 – [www.cl.cam.ac.uk/Research/Origami/Origami1997c/index.html], pages 1-9.

Regarding independent claim 1, Robinson discloses defining a referenced item in an electronic document in sections 3, 4, 4.1, and 4.4. Robinson discloses determining the absolute

coordinates of the referenced item in sections 3 and 4.4. Robinson discloses defining a hyperlink to the physical document in sections 3, 4, 4.1, and 4.4. Robinson discloses encoding the absolute coordinates in the hyperlink in sections 3 and 4.4. An electronic document and physical document work in tandem in the DigitalDesk to create and animated document.

Regarding dependent claim 2, Robinson discloses encoding an address of a second electronic document in the hyperlink in sections 3, 4, 4.1, and 4.4. The electronic document paired with the paper document contains hyperlinks which point to other electronic resources such as other electronic documents.

Regarding dependent claim 3, Robinson discloses wherein the address of the second electronic document is a Uniform Resource Locator address of a web server hosting the second electronic document. The registry is a server which maintains the hyperlinked documents and the links between them.

Regarding dependent claim 4, Robinson discloses storing the absolute coordinates in a table in sections 3 and 4.4. The each page representation in the registry maintains the associations between the coordinates and the interactors, or reference items, on the page.

Regarding dependent claim 8, Robinson discloses wherein the electronic document is a hyper text markup language document and wherein the hyperlink uses syntactic conventions of hyper text markup language in the abstract and sections 4, 4.1, and 4.4.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. (hereinafter "Robinson"), "A framework for interacting with paper", Eurographics '97, Volume 16, Number 3 – [www.cl.cam.ac.uk/Research/Origami/Origami1997c/index.html], pages 1-9 in view of Musk et al. (hereinafter "Musk"), US 6,148,260 continuation filed 11/8/1996.

Regarding dependent claim 7, Robinson does not teach wherein the referenced item is related to a geographic location; the absolute coordinates include geographic coordinates; and wherein the physical document includes a map. Musk does teach a map document which contains reference items related to geographic locations and identified by geographic coordinates. The map facilitates a user search of business services in a particular geographic area.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Musk into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the map and geographic coordinate teachings of Musk to have improved the enhanced document of Robinson so that the paper document of Robinson would have presented a map in paper form which provided geographic coordinates to reference items on the map to help a user find and locate available business services on the map. Maps are traditionally composed of paper and thus would have been a good candidate for use in the DigitalDesk system taught by Robinson.

Regarding dependent claim 9, Robinson teaches computing absolute camera coordinates associated with the referenced items and including the absolute camera coordinates in a hyperlink in sections 4, 4.1, and 4.4. Robinson does not teach computing geographic coordinates associated with the referenced items and including the geographic coordinates in the hyperlink. Musk does teach computing geographic coordinates associated with the referenced items in a map document and including the geographic coordinates in the hyperlink in col. 2 line 66 – col. 3 line 2 and col. 3 lines 42-44.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Musk into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the geographic coordinate computation and hyperlink inclusion of Musk to have improved Robinson so that the map paper document could have been used and interacted with using the DigitalDesk. Robinson teaches absolute coordinates relating to reference items on the document, but not geographic coordinates, because Robinson does not specifically discuss a map example. It would have been obvious and desirable to have enhanced a traditional paper map document with the electronic reference information as taught by Robinson and Musk so that a user could have received detailed information about businesses and services available in the area displayed by the map.

Regarding dependent claim 10, Robinson does not teach wherein the geographic coordinates include longitude and latitude. Musk does teach wherein the geographic coordinates include longitude and latitude in col. 3 lines 42-44. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Musk into Robinson to have created the claimed invention. It would have been obvious and desirable to

have used the longitude and latitude geographic coordinates to have improved Robinson so that the map paper document could have been used and interacted with using the DigitalDesk. Robinson teaches absolute coordinates relating to reference items on the document, but not longitude and latitude geographic coordinates, because Robinson does not specifically discuss a map example. It would have been obvious and desirable to have enhanced a traditional paper map document with the electronic reference information as taught by Robinson and Musk so that a user could have received detailed information about businesses and services available in the area displayed by the map.

8. Claims 5-6, 11, 13-15, 18-19, and 20-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. (hereinafter "Robinson"), "A framework for interacting with paper", Eurographics '97, Volume 16, Number 3 – [www.cl.cam.ac.uk/Research/Origami/Origami1997c/index.html], pages 1-9 in view of Moran et al. (hereinafter "Moran"), US 6,326,946 B1 filed 9/17/1998 and Thompson et al. (hereinafter "Thompson"), US 5,986,401 patented 11/16/1999.

Regarding dependent claim 5, Robinson teaches computing camera coordinates from the absolute coordinates of the referenced item in sections 3 and 4.4. Robinson does not teach computing foil coordinates because Robinson uses a camera location system instead of a touch foil system. Moran teaches use of a touch foil system in col. 6 lines 13-19 and teaches wherein the touch foil is used to associate a service with a particular physical location in col. 2 line 50 – col. 3 line 3.

Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 6, Robinson teaches storing camera coordinates in table called a page representation in section 3 and 4.4. Robinson does not teach storing foil coordinates because Robinson uses a camera location system instead of a touch foil system. Moran teaches use of a touch foil system in col. 6 lines 13-19 and teaches wherein the touch foil is used to associate a service with a particular physical location in col. 2 line 50 – col. 3 line 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the touch foil teaching of Moran into the DigitalDesk system of Robinson to have created the claimed invention. It would have been obvious and desirable to have used a touch foil instead of a camera system as taught in Robinson so that the location tracking would not have been disrupted by visually blocking the line of sight between the camera lens and the stylus accidentally with the users hand or other object.

Regarding independent claim 11, Robinson teaches an electronic document reference item in sections 3, 4, 4.1, and 4.4. Robinson teaches a hyperlink to a physical document within the referenced item in sections 3, 4, 4.1, and 4.4. Robinson teaches encoded absolute coordinates of the referenced item within the hyperlink in sections 3, 4, 4.1, and 4.4.

Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 13, Robinson teaches wherein the electronic document is a hyper text markup language document, and the hyperlink uses syntactic convention of hyper text markup language in the abstract and sections 4, 4.1, and 4.4.

Regarding dependent claim 14, Robinson teaches encoding an address of a second electronic document in the hyperlink in sections 3, 4, 4.1, and 4.4. The electronic document paired with the paper document contains hyperlinks which point to other electronic resources such as other electronic documents.

Regarding dependent claim 15, Robinson teaches wherein the address of the second electronic document is a Uniform Resource Locator address of a web server hosting the second electronic document. The registry is a server which maintains the hyperlinked documents and the links between them.

Regarding independent claim 18, Robinson teaches aligning a camera-projector system with a physical document in fig. 1 and section 4.3. Robinson teaches identifying a referenced item in an electronic document in sections 3, 4, 4.1, and 4.4. Robinson teaches identifying a physical document in sections 3, 4, 4.1, and 4.4. Robinson teaches determining the absolute coordinates of the referenced item in sections 3, 4, 4.1, and 4.4. Robinson teaches computing camera coordinates from the absolute coordinates of the referenced item in sections 3 and 4.4. Robinson does not teach computing foil coordinates because Robinson uses a camera location system instead of a touch foil system. Moran teaches use of a touch foil system in col. 6 lines 13-19 and teaches wherein the touch foil is used to associate a service with a particular physical location in col. 2 line 50 – col. 3 line 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the touch foil teaching of Moran into the DigitalDesk system of Robinson to have created the claimed invention. It would have been obvious and desirable to have used a touch foil instead of a camera system as taught in Robinson so that the location tracking would not have been disrupted by visually blocking the line of sight between the camera lens and the stylus accidentally with the users hand or other object.

Robinson does not teach use of an opto-touch foil to obtain user input and display user feedback on the physical document. Robinson does not teach use of an opto-touch foil because

Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 19, Robinson teaches storing the absolute coordinates in a table in sections 3 and 4.4. The each page representation in the registry maintains the associations between the coordinates and the interactors, or reference items, on the page. Robinson teaches storing camera coordinates in table called a page representation in section 3 and 4.4. Robinson does not teach storing foil coordinates because Robinson uses a camera location system instead of a touch foil system. Moran teaches use of a touch foil system in col. 6 lines 13-19 and teaches wherein the touch foil is used to associate a service with a particular physical location in col. 2 line 50 – col. 3 line 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the touch foil teaching of Moran into the DigitalDesk system of Robinson to have created the claimed invention. It would have been obvious and desirable to have used a touch foil instead of a camera system as taught in Robinson so that the location

tracking would not have been disrupted by visually blocking the line of sight between the camera lens and the stylus accidentally with the users hand or other object.

Regarding dependent claim 20, Robinson teaches sending coordinates to the projector that optically highlights a position upon the physical document responsive to the projector coordinates. Robinson does not teach use foil coordinates or an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 21, Robinson teaches determining the calibration camera-projector coordinates of a point pressed on the opto-touch foil, which point corresponds to the referenced item, and calibrating the opto-touch foil using the calibration foil coordinates in section 4.2. Robinson does not teach foil coordinates or a opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for

presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 22, Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 23, Robinson teaches wherein the encoded absolute coordinates identify a location, on the camera-projector system aligned with the physical document, associated with the reference item in sections 3, 4.3, 4.4, 5, and 6. Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input

from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claims 24 and 25, Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding independent claim 26, Robinson teaches aligning a camera-projector system with a physical document in fig. 1 and section 4.3. Robinson teaches identifying a referenced item in an electronic document in sections 3, 4, 4.1, and 4.4. Robinson teaches identifying a physical document in sections 3, 4, 4.1, and 4.4. Robinson teaches determining the absolute coordinates of the referenced item in sections 3, 4, 4.1, and 4.4. Robinson teaches computing camera coordinates from the absolute coordinates of the referenced item in sections 3 and 4.4. Robinson does not teach computing foil coordinates because Robinson uses a camera location system instead of a touch foil system. Moran teaches use of a touch foil system in col. 6 lines 13-19 and teaches wherein the touch foil is used to associate a service with a particular physical location in col. 2 line 50 – col. 3 line 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the touch foil teaching of Moran into the DigitalDesk system of Robinson to have created the claimed invention. It would have been obvious and desirable to have used a touch foil instead of a camera system as taught in Robinson so that the location tracking would not have been disrupted by visually blocking the line of sight between the camera lens and the stylus accidentally with the users hand or other object.

Robinson does not teach use of an opto-touch foil to obtain user input and display user feedback on the physical document. Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 27, Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 28, Robinson teaches a table in which the absolute coordinates and the camera-projector coordinates are stored in sections 2, 3, 4.3, and 4.4. Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6

lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 29, Robinson teaches wherein the camera-projector is adapted to optically highlight a location on the physical document corresponding to the referenced item, in response to the camera-projector system being activated at a location thereon corresponding to the referenced item in sections 3, 4.3, 5, and 6. Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

Regarding dependent claim 30, Robinson teaches a means for determining calibration coordinates of a point activated on the camera-projector system, which point corresponds to the referenced item, and a means for calibrating the camera-projector using the calibration coordinates in 3, 4.3, 4.4, 5, and 6. Robinson does not teach use of an opto-touch foil because Robinson uses a camera-projector system to read input from the user and display feedback to the user. Moran teaches a touch foil for identifying a location selected by a user's touch in col. 2 line 50 – col. 3 line 3 and col. 6 lines 13-19. Thompson teaches a transparent organic LED (TOLED) display for presenting feedback to a user in the abstract and fig. 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Moran and Thompson into Robinson to have created the claimed invention. It would have been obvious and desirable to have used the touch foil of Moran and the TOLED of Thompson to have improved Robinson so that the position could have been sensed and feedback presented to the user without the user's hand or input pen interfering with either the sight of the input camera or the projection of the feedback projector of Robinson.

9. Claims 12 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. (hereinafter "Robinson"), "A framework for interacting with paper", Eurographics '97, Volume 16, Number 3 – [www.cl.cam.ac.uk/Research/Origami/Origami1997c/index.html], pages 1-9 in view of Moran et al. (hereinafter "Moran"), US 6,326,946 B1 filed 9/17/1998 and Thompson et al. (hereinafter "Thompson"), US 5,986,401 patented 11/16/1999 as applied to claims 11 and

18 above, and further in view of Musk et al. (hereinafter "Musk"), US 6,148,260 continuation filed 11/8/1996.

Regarding dependent claim 12, Robinson teaches wherein the referenced item includes absolute coordinates in sections 4, 4.1, and 4.4. Robinson does not teach wherein the referenced item includes a geographic location and the absolute coordinates include geographic coordinates of the geographic location. Musk does teach wherein the referenced item includes a geographic location and the absolute coordinates include geographic coordinates of the geographic location in col. 2 line 66 – col. 3 line 2 and col. 3 lines 42-44.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Musk into Robinson in view of Moran and Thompson to have created the claimed invention. It would have been obvious and desirable to have used the map and geographic coordinate teachings of Musk to have improved the enhanced document of Robinson so that the paper document of Robinson would have presented a map in paper form which provided geographic coordinates to reference items on the map to help a user find and locate available business services on the map. Maps are traditionally composed of paper and thus would have been a good candidate for use in the DigitalDesk system taught by Robinson.

Regarding dependent claim 16, Robinson teaches wherein the referenced item includes absolute coordinates in sections 4, 4.1, and 4.4. Robinson does not teach wherein the absolute coordinates include geographic coordinates. Musk does teach wherein the absolute coordinates include geographic coordinates in col. 2 line 66 – col. 3 line 2 and col. 3 lines 42-44.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Musk into Robinson in view of Moran and Thompson to have

created the claimed invention. It would have been obvious and desirable to have used the map and geographic coordinate teachings of Musk to have improved the enhanced document of Robinson so that the paper document of Robinson would have presented a map in paper form which provided geographic coordinates to reference items on the map to help a user find and locate available business services on the map. Maps are traditionally composed of paper and thus would have been a good candidate for use in the DigitalDesk system taught by Robinson.

Regarding dependent claim 17, Robinson does not teach wherein the geographic coordinates include longitude and latitude. Musk does teach wherein the geographic coordinates include longitude and latitude in col. 3 lines 42-44. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Musk into Robinson in view of Moran and Thompson to have created the claimed invention. It would have been obvious and desirable to have used the longitude and latitude geographic coordinates to have improved Robinson so that the map paper document could have been used and interacted with using the DigitalDesk. Robinson teaches absolute coordinates relating to reference items on the document, but not longitude and latitude geographic coordinates, because Robinson does not specifically discuss a map example. It would have been obvious and desirable to have enhanced a traditional paper map document with the electronic reference information as taught by Robinson and Musk so that a user could have received detailed information about businesses and services available in the area displayed by the map.

Response to Arguments

10. Applicant's arguments filed 1/19/2005 have been fully considered but they are not persuasive. Regarding Applicant's arguments in pages 11 and 12 that Robinson et al. (hereinafter "Robinson") does not teach all the limitations of claim 1, the Examiner respectfully disagrees. The interactor cited by Applicant has a set of coordinates that corresponds to the location of the interactor. But, the interactor has encoded therein absolute coordinates so that the system may project feedback onto the physical document at the location of the absolute coordinates as is taught by Robinson in sections 2, 4.3, 5, and 6. Robinson teaches in section 4.1 that hyperlinks may be interactors and thus have encoded therein absolute coordinates for projecting information back onto the physical document at those absolute coordinates. Thus, the Examiner believes that Robinson does in fact disclose that referenced items on the physical document have absolute coordinates that are determined and that the absolute coordinates are encoded in the interactive hyperlinks.

Regarding Applicant's arguments in pages 13 and 14 that Robinson, Moran et al. (hereinafter "Moran"), and Thompson et al. (hereinafter "Thompson") do not teach all the limitations of claim 11, the Examiner respectfully disagrees. The interactor cited by Applicant has a set of coordinates that corresponds to the location of the interactor. But, the interactor has encoded therein absolute coordinates so that the system may project feedback onto the physical document at the location of the absolute coordinates as is taught by Robinson in sections 2, 4.3, 5, and 6. Robinson teaches in section 4.1 that hyperlinks may be interactors and thus have encoded therein absolute coordinates for projecting information back onto the physical document at those absolute coordinates. Thus, the Examiner believes that Robinson, Moran, and

Thompson do in fact disclose that referenced items on the physical document have absolute coordinates that are determined and that the absolute coordinates are encoded in the interactive hyperlinks.

Regarding Applicant's arguments in pages 15 and 16 that Robinson, Moran, and Thompson do not teach all the limitations of claim 18, the Examiner respectfully disagrees. The interactor cited by Applicant has a set of coordinates that corresponds to the location of the interactor. But, the interactor has encoded therein absolute coordinates so that the system may project feedback onto the physical document at the location of the absolute coordinates as is taught by Robinson in sections 2, 4.3, 5, and 6. Robinson teaches in section 4.1 that hyperlinks may be interactors and thus have encoded therein absolute coordinates for projecting information back onto the physical document at those absolute coordinates. The Examiner does not rely on Moran, but rather Thompson to teach the optical limitations of the claimed invention. Thus, the Examiner believes that Robinson, Moran, and Thompson do in fact disclose that referenced items on the physical document have absolute coordinates that are determined, that the absolute coordinates are encoded in the interactive hyperlinks, and that an opto-touch foil may be aligned with the physical document.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Smith whose telephone number is 571-272-4101. The examiner can normally be reached on Mondays-Fridays 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJS
4/22/2005

JOSEPH FEILD
SUPERVISORY PATENT EXAMINER